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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,214	06/13/2001	Takamasa Ishii	35.C15442	4090
5514	7590	12/01/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			GAGLIARDI, ALBERT J	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2878	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/879,214

Applicant(s)

ISHII ET AL.

Examiner

Albert J. Gagliardi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2001.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-15 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 June 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/02.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 22 February 2002 fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered. Additionally, no applications have been received.

For applicant's convenience, the patents associated with the listed applications have been listed by the examiner on the attached PTO-892.

Drawings

2. Figures 11-13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi *et al.* (US 5,912,465) in view of Martin (US 5,608,245).

Regarding claim 1, *Kobayashi* (Figs. 1-3, 8) discloses a semiconductor device comprising a plurality of semiconductor elements (S11, S12); a plurality of switching elements (T11, T12); a plurality of drive lines (g1, g2) for driving the switching elements; and a plurality of signal lines (s1, s2) for reading out an electric charge detected by the semiconductor elements provided on an insulating substrate (100).

Kobayashi does not disclose that the semiconductor device further comprises a redundant wiring which forms a plurality of crossings with at least one of the drive lines and the signal lines and is electrically insulated from the at least one of the drive lines and the signal lines at each crossing.

Regarding the redundant wiring, *Martin* discloses a semiconductor device including a redundant wiring (150) which forms a plurality of crossings with at least one of a first set of lines (124, 126) and is electrically insulated from the at least one set of lines at each crossing (col. 9, lines 33-39).

Martin teaches that such an arrangement allows for an advantageous solution to the problem of open lines occurring during fabrication of sensing arrays (col. 1, line 49 to col. 2, line 3). Therefore, it would have been obvious to a person of ordinary skill in the art to modify the device disclosed by *Kobayashi* so as to further include redundant wiring in order to allow for an advantageous way to repair such arrays.

Regarding claim 2, *Martin* discloses that when a breaking exists in one of the lines, the broken line and the redundant wiring are electrically connected at the crossing thereof (col. 7, lines 44-62).

Regarding claim 3, *Martin* discloses that the broken line and the redundant wiring are electrically connected by irradiating the crossing with a laser (col. 7, lines 44-62).

Regarding claim 4, the inclusion of pads on the signal and/or drive lines of semiconductor devices for aiding the connection of leads and conductors is well known and, absent some degree of criticality, would have been an obvious design choice within the skill of a person of ordinary skill in the art depending on the needs of the particular application.

Regarding claim 5, *Martin* discloses that the broken line and the redundant wiring may be electrically connected by applying a voltage therebetween (col. 10, line 43-50).

Regarding claims 6-7, absent some degree of criticality, that particular potential to which the repair line is connected would be a matter of routine design choice within the skill of a person of ordinary skill in the art depending on the particular sensor application and the type of line being repaired.

Regarding claim 8, *Martin* discloses that the electrical connection is effected in the crossing to fix the broken line (col. 3, lines 3-33). Fixing the potential on the broken line would

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have been a matter of routine design choice within the skill of a person of ordinary skill in the art depending on the particular sensor application and the type of line being repaired.

Regarding claim 9, *Martin* discloses that a semiconductor layer is formed between the lines and the redundant wiring at the crossings (col. 3, lines 20-24).

Regarding claim 10, the semiconductor device as recited according to claim 10 is suggested by the device suggested by *Kobayashi* and *Martin* as applied above, and or in view of *Kobayashi*, *Martin* and other well known semiconductor devices including the admitted prior art of the present invention (Figs, 11-12), and is rejected accordingly.

Regarding claim 11, the radiation detection device as recited according to claim 11 is suggested by the device suggested by *Kobayashi* and *Martin* as applied above, and/or in view of *Kobayashi*, *Martin* and other well known semiconductor devices including the admitted prior art of the present invention (Figs, 11-12), and is rejected accordingly.

Regarding claim 13, *Kobayashi* discloses that the device is a radiation detection device (col. 1, lines 5-9).

Regarding claim 14, the use of wavelength converters in conjunction with radiation imaging systems is well known and considered an obvious design choice in order to allow for improved detection efficiency.

Regarding claim 15, elements such as signal processing means, recording and display means, transmission processing means, and a radiation source are well-known elements of radiation imaging systems and considered a routine design choice.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Kobayashi* and *Martin* as applied above, and further in view of Zhao *et al.* (US 5,962,856).

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Regarding claim 12, although *Kobayashi* and *Martin* do not disclose the radiation detector as comprising amorphous selenium or GaAs, the use of such materials are well known for use in radiation detectors (see for example Zhao (abstract)) and, absent some degree of criticality, would have been a matter of routine design choice.


Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Albert J. Gagliardi
Primary Examiner
Art Unit 2878

AJG